

## **Curriculum Vitae of Terry L. Murray**

### **President, Murray & Cratty, LLC**

**January 1998 - present**

Economic consulting and expert witness testimony specializing in regulatory and antitrust matters.

### **Principal, Murray and Associates**

**April 1992 - December 1997**

Economic consulting and expert witness testimony, primarily in the fields of telecommunications, energy and insurance regulation and antitrust.

### **Director, Regulatory Economics, Morse, Richard, Weisenmiller & Associates, Inc.**

**April 1990 - April 1992**

Economic consulting and expert witness testimony, primarily in the fields of telecommunications and energy regulation.

### **California Public Utilities Commission**

**June 1984 - March 1990**

#### ***Director, Division of Ratepayer Advocates (DRA)***

***March 1989 - March 1990***

Headed a staff of over 200 analysts who provided expert witness testimony on behalf of California ratepayers in contested proceedings involving telecommunications, electric, gas, water and transportation utilities.

#### ***Program Manager, Energy Rate Design and Economics Branch, DRA***

***October 1987 - March 1989***

Managed a staff of over 30 analysts who testified on electric and gas rate design and costing issues, sales forecasts and productivity analyses. Testified as lead policy witness in electric utility incentive ratemaking and transportation policy proceedings.

#### ***Senior Policy Analyst, Policy and Planning Division***

***March 1987 - October 1987***

Organized *en banc* hearing and drafted notice of investigation for major telecommunications incentive regulation proceeding. Headed Commission task force on open network architecture.

#### ***Commissioner's Advisor***

***July 1985 - March 1987***

Lead advisor on independent power industry and cost of capital issues. Analyzed proposed decisions on energy, telecommunications, water and transportation issues and made recommendations for Commission action.

#### ***Staff Economist, Public Staff Division***

***June 1984 - July 1985***

Testified on cost of capital and telecommunications bypass issues. Served on telecommunications strategy task force charged with developing recommendations for post-divestiture regulatory policies.

**Instructor, Golden Gate University  
1986 - 1987**

Taught courses on telecommunications regulation to students in the Masters in Telecommunications Management program and students in a special program for federal government telecommunications managers.

**Acting Assistant Professor of Economics, Wesleyan University  
July 1981 - June 1982**

Taught undergraduate courses in microeconomics, macroeconomics, econometrics, and economics and policy of regulation.

**SELECTED TESTIMONY (SINCE 1/1/97)**

**California Public Utilities Commission**

- R.01-09-001/ I.01-09-002, Orders Instituting Rulemaking/Investigation on the Commission's Own Motion to Assess and Revise the New Regulatory Framework for Pacific Bell and Verizon California Incorporated, 6/21/02, 7/19/02.
- R.93-04-003/I.93-04-002, Rulemaking and Investigation on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish and Framework for Network Architecture Development of Dominant Carrier Networks, and R. 95-04-043/I.95-04-044, Rulemaking and Investigation on the Commission's Own Motion into Competition for Local Exchange Service (consolidated for purposes of evaluating Pacific Bell's Section 271 application), 8/23/01.
- A.01-02-024, Joint Application of AT&T Communications of California, Inc. (U 5002 C) and WorldCom, Inc. for the Commission to Reexamine the Recurring Costs and Prices of Unbundled Switching in Its First Annual Review of Unbundled Network Element Costs Pursuant to Ordering Paragraph 11 of D.99-11-050, and A.01-02-035, Application of AT&T Communications of California, Inc. (U 5002 C) and WorldCom, Inc. for the Commission to Reexamine the Recurring Costs and Prices of Unbundled Loops in Its First Annual Review of Unbundled Network Element Costs Pursuant to Ordering Paragraph 11 of D.99 11-050, 2/21/01, 2/28/01, 8/20/01, 10/30/01, 11/9/02, 2/28/02, 10/18/02, 2/7/03, 3/12/03.
- A.01-01-010, Application by Pacific Bell Telephone Company (U 1001 C) for Arbitration of an Interconnection Agreement with MCImetro Access Transmission Services, L.L.C. (U 5253 C) Pursuant to Section 252(b) of the Telecommunications Act of 1996, 2/2/01.
- A.00-01-022, Application of AT&T Communications of California, Inc., *et al.*, for Arbitration of an Interconnection Agreement with Pacific Bell Pursuant to Section 252(b) of the Telecommunications Act of 1996, 1/24/00, 3/5/00.
- A.00-01-012, In the Matter of Covad Communications Company's (U 5752 C) Petition for Arbitration of Interconnection Agreement with Roseville Telephone Company (U 1015 C), 1/7/00.
- A.98-12-005, In the Matter of the Joint Application of GTE Corporation ("GTE") and Bell Atlantic Corporation ("Bell Atlantic") to Transfer Control of GTE's California Utility Subsidiaries to Bell Atlantic Which Will Occur Indirectly as a Result of GTE's Merger with Bell Atlantic, 6/7/99.
- A.99-03-047, In the Matter of the Petition by Pacific Bell (U 1001 C) for Arbitration of an Interconnection Agreement with Metropolitan Fiber Systems/ Worldcom Technologies, Inc. (MFS/Worldcom) Pursuant to Section 252(b) of the Telecommunications Act of 1996, 4/16/99, 5/24/99.

- A.98-05-038, In the Matter of the Application of Pacific Bell for Authority for Pricing Flexibility and to Increase Certain Operator Services, to Reduce the Number of Monthly Directory Assistance Call Allowances, and Adjust Prices for Four Centrex Optional Features, 11/17/98.
- A.98-06-052, In the Matter of the Petition of PDO Communications, Inc. for Arbitration Pursuant to Section 252 of the Federal Telecommunications Act of 1996 to Establish an Interconnection Agreement with Pacific Bell, 8/14/98.
- R.93-04-003/1.93-04-002, Rulemaking and Investigation on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish and Framework for Network Architecture Development of Dominant Carrier Networks, 3/18/97, 12/19/97, 2/11/98, 4/8/98, 4/27/98, 5/1/98, 6/5/98, 12/18/98, 1/11/99, 2/8/99, 3/15/00, 3/27/00, 4/5/00, 5/2/00, 6/11/01, 6/25/01, 7/24/01, 7/30/02, 8/20/02, 9/9/02.

**Delaware Public Service Commission**

- Docket No. 96-324, Bell Atlantic - Delaware Statement of Terms and Conditions Under Section 252(F) of the Telecommunications Act of 1996, 2/4/97.

**District of Columbia Public Service Commission**

- Formal Case No. 962, In the Matter of the Implementation of the District of Columbia Telecommunications Act of 1996 and Implementation of the Telecommunications Act of 1996, 3/24/97, 5/2/97, 5/9/97, 1/11/02.

**Federal Communications Commission**

- WC Docket No. 02-306, In the Matter of Application by SBC Communications Inc., Pacific Bell Telephone Company, and Southwestern Bell Communications Services, Inc. for Provision of In-Region, InterLATA Services in California, 10/9/02.
- CC Docket No. 01-338, In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, 7/17/02.
- File No. EB-02-MD-017, WorldCom, Inc., Complainant, v. Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), and Verizon Global Networks, Inc., Defendants, 5/7/02.
- CC Docket Nos. 00-218, 00-249 and 00-251, In the Matter of the Petition of WorldCom, Inc., Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia, Inc., and for Expedited Arbitration, *et al.*, 7/31/01, 8/27/01, 9/21/01.
- File No. E-98-12, MCI Telecommunications Corp. and MCImetro Access Transmission Services, Inc., Complainants, v. Bell Atlantic Corp., Defendant, 12/19/97, 3/25/98.

**Florida Public Service Commission**

- Docket No. 990649-TP, In re: Investigation into the Pricing of Unbundled Network Elements, 8/11/99, 9/10/99, 10/15/99, 6/8/00, 7/31/00, 8/28/00.

**Georgia Public Service Commission**

- Docket No. 14361-U, In re: Generic Proceeding to Review Cost Studies, Methodologies, Pricing Policies and Cost Based Rates for Interconnection and Unbundling of BellSouth Telecommunications, Inc.'s Network, 4/5/02.
- Docket No. 11900-U, In re: Investigation of BellSouth Telecommunications, Inc.'s Provision of Unbundled Network Elements for xDSL Service Providers, 11/13/00, 12/20/00.

**Hawaii Public Service Commission**

- Docket No. 7702, In the Matter of Public Utilities Commission Instituting a Proceeding on Communications, Including an Investigation of the Communications Infrastructure of the State of Hawaii, 7/3/97, 8/29/97, 6/2/00.

**Illinois Commerce Commission**

- Docket No. 00-0393, Illinois Bell Telephone Company Proposed Implementation of High Frequency Portion of Loop (HFPL) / Line Sharing Service, 9/1/00, 9/20/00, 10/4/00.
- Docket Nos. 00-0312 and 00-0313, Petitions of Covad Communications Company and Rhythms Links Inc. for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Amendment for Line Sharing to the Interconnection Agreement with Illinois Bell Telephone Company d/b/a Ameritech Illinois, and for an Expedited Arbitration Award on Certain Core Issues, 5/15/00, 6/22/00, 11/21/00, 12/12/00, 12/21/00, 7/13/00.
- Docket No. 98-0396, Investigation into the Compliance of Illinois Bell Telephone Company with the Order in Docket 96-0486/0569 Consolidated Regarding the Filing of Tariffs and the Accompanying Cost Studies for Interconnection, Unbundled Network Elements and Local Transport and Termination and Regarding End to End Bundling Issues, 3/29/00, 5/5/00, 7/12/00.
- Docket No. 99-0593, Investigation of Construction Charges, 2/17/00, 3/8/00, 3/22/00.

**Kansas Corporation Commission**

- Docket No. 00-DCIT-997-ARB, In the Matter of the Petition of Covad Communications Company for Arbitration of Interconnection Rates, Terms, Conditions and Related Arrangements for Line Sharing with Southwestern Bell Telephone Company, 6/12/00.
- Docket No. 00-DCIT-389-ARB, In the Matter of the Petition of DIECA Communications, Inc. d/b/a Covad Communications Company for Arbitration of Interconnection Rates, Terms, Conditions and Related Arrangements with Southwestern Bell Telephone Company, 1/7/00, 1/25/00, 2/21/00.

**Maryland Public Service Commission**

- Case No. 8918, In the Matter of the Review of Verizon Maryland Inc.'s Price Cap Regulatory Plan, 9/13/02.
- Case No. 8921, In the Matter of the Review by the Commission into Verizon Maryland Inc.'s Compliance with the Conditions of 47 U.S.C. § 271(c), 7/15/02.
- Case No. 8879, In the Matter of the Investigation into Rates for Unbundled Network Elements Pursuant to the Telecommunications Act of 1996, 5/25/01, 9/5/01, 10/15/01.
- Case No. 8745, In the Matter of the Provision of Universal Service to Telecommunications Consumers, 5/21/01, 6/11/01.
- Case No. 8842, In the Matter of Rhythms Links Inc. and Covad Communications Company vs. Bell Atlantic-Maryland, Inc., pursuant to Section 252(B) of the Telecommunications Act of 1996, 5/5/00, 7/14/00, 10/27/00.
- Case No. 8820, In the Matter of the Investigation into Affiliated Activities, Promotional Practices and Codes of Conduct of Regulated Gas and Electric Companies, 10/1/99, 10/26/99, 12/10/99.
- Docket No. 8797, In the Matter of The Potomac Edison Company's Proposed: (a) Stranded Cost Quantification Mechanism; (b) Price Protection Mechanism; (c) and Unbundled Rates, 1/26/99.

- Docket No. 8795, In the Matter of Delmarva Power and Light Company's Proposed Stranded Cost Quantification Mechanism, Price Protection Mechanism, and Unbundled Rates, 12/28/98.
- Docket No. 8794, In the Matter of Baltimore Gas and Electric (BGE)'s Proposed Stranded Cost Quantification Mechanism, Price Protection Mechanism, and Unbundled Rates, 12/22/98, 7/23/99, 8/3/99.
- Docket No. 8786, In the Matter of the Investigation of Non-Recurring Charges for Telecommunications Interconnection Service, 5/27/98, 11/16/98, 12/18/98.
- Docket No. 8731, Phase II, In the Matter of the Petitions for Approval of Agreements and Arbitration of Unresolved Issues Arising Under §252 of the Telecommunications Act of 1996, 3/7/97.

**Massachusetts Department of Telecommunications and Energy**

- Docket No. DTE 98-57, Investigation by the Department on its own motion as to the propriety of the rates and charges set forth in the following tariffs: M.D.T.E. Nos. 14 and 17, filed with the Department on April 2, 1999, to become effective May 2, 1999, by New England Telephone and Telegraph Company d/b/a Bell Atlantic – Massachusetts, 7/26/99, 11/9/99.

**Michigan Public Service Commission**

- Case No. U-12540, In the Matter of the Application of Ameritech Michigan for Approval of Cost Studies and Resolution of Disputed Issues Related to Certain New UNE Offerings, 9/15/00, 10/13/00.

**Minnesota Public Utilities Commission**

- PUC Docket No. P-421/CI-01-1371, In the Matter of a Commission Investigation into Qwest's Compliance with Section 272(c)(2)(B) of the Telecommunications Act of 1996; Checklist Items 1, 2, 4, 5, 6, 11, 13, and 14, 6/10/02, 8/2/02, 8/29/02, 9/10/02.
- PUC Docket No. P-421/CI-01-1370, In the Matter of a Commission Investigation into Qwest's Compliance with Section 272(c)(2)(B) of the Telecommunications Act of 1996; Checklist Items 3, 7, 8, 9, 10 and 12, 1/28/02, 2/22/02.

**Missouri Public Service Commission**

- Case No. TO-2001-439, In the Matter of the Determination of Prices, Terms, and Conditions of Conditioning for xDSL-Capable Loops, 6/22/01, 7/13/01.
- Case No. TO-2000-322, In the Matter of the Petition of DIECA Communications, Inc. d/b/a Covad Communications Company for Arbitration of Interconnection Rates, Terms, Conditions and Related Arrangements with Southwestern Bell Telephone Company, 1/7/00, 1/27/00, 2/10/00.

**Nevada Public Service Commission**

- In re a Petition of the Staff of the Public Utilities Commission to Open a Docket to Investigate Costing and Pricing Issues Related to Industry-Wide Collocation Costs Pursuant to the Telecommunications Act of 1996 and the Commission's Regulations, 11/3/00.
- Docket No. 96-9035, In re a Petition by the Regulatory Operations Staff to Open an Investigation into the Procedures and Methodologies that Should Be Used to Develop Costs for Bundled or Unbundled Telephone Services or Service Elements in the State of Nevada, 5/8/97, 5/23/97.

**New Jersey Board of Public Utilities**

- Docket No. TO00060356, In the Matter of the Board's Review of Unbundled Network Elements Rates, Terms and Conditions of Bell Atlantic – New Jersey, 10/12/00.

**New York Public Service Commission**

- Case No. 98-C-1357, Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements, 9/23/99, 10/18/99, 10/22/99, 2/7/00, 2/22/00, 3/31/00, 4/17/00, 6/26/00, 10/19/00, 11/13/00.

**Ohio Public Utilities Commission**

- Case No. 96-922-TP-UNC, In the Matter of the Review of Ameritech Ohio's Economic Costs for Interconnection, Unbundled Network Elements, and Reciprocal Compensation for Transport and Termination of Local Telecommunications Traffic, 10/6/00.

**Oklahoma Corporation Commission**

- Cause No. PUD 200000192, Applicant: Southwestern Bell Telephone Company; Relief Sought: Approval of Nonrecurring Rates for Conditioning Unbundled Digital Subscriber Line ("DSL") Capable Loops, 7/12/00, 8/1/00.

**Oregon Public Utility Commission**

- Case No. UM-731, Phase IV, In the Matter of the Investigation of Universal Service in the State of Oregon, 1/17/00.

**Pennsylvania Public Utility Commission**

- Docket No. R-00016683, Generic Investigation of Verizon Pennsylvania, Inc.'s Unbundled Network Element Rates, 12/7/01, 1/11/02, 2/8/02.
- Docket No. M-00001353, Re Structural Separation of Verizon-Pennsylvania Inc. Wholesale and Retail Operations, 10/10/00.
- Docket No. R-00005261, In re: Further Pricing of Bell Atlantic Pennsylvania, Inc.'s Unbundled Network Elements, 10/4/00.
- Docket Nos. R-00994697 and R-994697C0001, Pennsylvania Public Utility Commission v. Bell Atlantic – Pennsylvania, Inc./ Rhythms Links Inc., Complainant v. Bell Atlantic – Pennsylvania, Inc., Respondent, 12/21/99, 1/14/00.
- Docket Nos. P-00991648, Joint Application of NEXTLINK Pennsylvania, Inc., *et al.* and P-00991649, Joint Application of Bell Atlantic – Pennsylvania, Inc., *et al.*, 4/22/99, 6/11/99.
- Docket Nos. A-310200F0002 *et al.*, In re the Joint Application of Bell Atlantic Corporation and GTE Corporation for Approval of Agreement and Plan of Merger, 3/23/99, 5/19/99.
- Docket No. I-00960066, Generic Investigation of Intrastate Access Charge Reform, 6/30/97, 7/29/97, 8/27/97.
- Docket No. A-310203F002, Application of MFS Intelenet of Pennsylvania, Inc., for Approval to Operate as a Local Exchange Telecommunications Company, 1/13/97, 2/97.

**Tennessee Regulatory Authority**

- Docket No. 97-00309, In Re: BellSouth Telecommunications, Inc.'s Entry into Long Distance (interLATA) Service in Tennessee Pursuant to Section 271 of the Telecommunications Act of 1996, 7/11/02.

**Texas Public Utility Commission**

- Docket No. 25834, Proceeding on Cost Issues Severed from P.U.C. Docket No. 24542, 11/4/02, 2/14/03.
- Docket Nos. 22168, Petition of IP Communications Corporation to Establish Public Utility Commission of Texas Oversight Concerning Line Sharing Issues and 22469, Complaint of Covad Communications Company and Rhythms Links, Inc. against Southwestern Bell Telephone Company and GTE Southwest Inc. for Post-Interconnection and Arbitration under the Telecommunications Act of 1996 Regarding Rates, Terms, Conditions and Related Arrangements for Line-Sharing, 5/17/00, 9/5/00 (rev. 10/6/00), 10/20/00.
- Docket Nos. 20226, Petition of Accelerated Connections, Inc. d/b/a ACI Corp. for Arbitration to Establish an Interconnection Agreement with Southwestern Bell Telephone Company, and 20272, Petition of DIECA Communications, Inc., d/b/a Covad Communications Company for Arbitration of Interconnection Rates, Terms and Conditions and Related Arrangements with Southwestern Bell Telephone Company, 2/19/99, 4/8/99.

**Washington Utilities and Transportation Commission**

- Docket No. UT-960639 *et al.*, Phase II, In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination, and Resale, 8/20/98, 9/11/98.

**EDUCATION**

**A.B.**, Oberlin College, Oberlin, Ohio. Major: Economics. National Merit Scholar, recipient of Hanson Prize in Economics, elected to Phi Beta Kappa.

**M.A., M.Phil.**, Yale University, New Haven, Connecticut. Economics. Admitted to Ph.D. candidacy and completed all Ph.D. requirements except dissertation. Fields of specialization included industrial organization and energy and environmental economics. Honorable mention, National Science Foundation Fellowship; recipient of University Fellowship and Sloan Foundation dissertation research fellowship.

**TLM – 2**

**SBC Pacific Data Responses**



**Data Request No. 4:**

Please identify each and every Pacific retail and wholesale service that in any manner utilizes the same database and/or data that are the source of the files referenced in SBC Pacific's DALIS study. Please also describe specifically how each named service utilizes that data and/or database.

**Data Request No. 7:**

Please identify all non Pacific, SBC-affiliated company retail and wholesale services that in any manner utilize the same database and/or data that are the source of the files referenced in SBC Pacific's DALIS study. Please also describe specifically how each named service utilizes that data and/or database.

**Pacific Bell Response to Data Request Nos. 4 and 7:**

Pacific Bell has objected to these data requests on the ground that the requests are not reasonably calculated to lead to the discovery of admissible evidence, as the data requested is not relevant to Pacific Bell's DALIS cost study. Pacific Bell specifically excluded from its DALIS cost study all costs not attributable to the DALIS product, by omitting all costs that would not exist but for the DALIS product. Without waiving that objection, Pacific Bell provides the following answer:

Listing records are used in many Pacific and non-Pacific SBC retail and wholesale products, the descriptions of which can be found in Pacific Bell's published tariffs (the following is not an exhaustive list):

- Local Directory Assistance Service Directory Assistance Listing Information Service (DALIS)
- Interexchange Carrier Directory Assistance Service (IECDA)
- Electronic Directory Listing Service (EDLS)
- National Directory Assistance
- Reverse Directory Assistance
- Pacific Bell directory publishing
- Publishing Rights
- Street Address Telephone Directory

**Data Request No. 11:**

If it is SBC Pacific's position that it imputes to itself the cost of creating, maintaining and accessing the files referenced in its DALIS study, please provide all documents that support that position, including any affiliate transaction records, if any.

**Pacific Bell Response to Data Request No. 11:**

No, it is not Pacific Bell's position that it "imputes to itself" the cost of creating, maintaining, and accessing the files referenced in its DALIS study.

**10/28/02 Meet and Confer Data Request 2:**

What is SBC Pacific Bell's DALIS pricing proposal?

**10/28/02 Meet and Confer Data Request 2 (SBC PACIFIC BELL RESPONSE):**

SBC Pacific Bell maintains that market-based pricing is appropriate for DALIS.

SBC Pacific Bell's proposed pricing plan for Directory Assistance Listings in California is equivalent to the market-based Directory Assistance Listing rates approved by the FCC in the X2A Agreements in SBC's 271 Applications for Missouri, Oklahoma, Kansas, Arkansas and Texas. X-2A Agreements are the state commission-approved interconnection agreements that result from CLEC collaborative in each specific state.

Proposed Pricing Plan as of November 15, 2002:

\$0.0585 per listing for the initial load

\$0.0585 per listing for each update listing (each addition, deletion, or change to the directory assistance database constitutes an updated listing.)

# ESTIMATED COSTS TO CREATE A DALIS FUNCTION

## DATA STORAGE ESTIMATES

Unit Description	Class of Plant	2002	2003
Initial Hardware Costs	Midrange Computers	\$225,000.00	
Initial Software Costs	Software/RTU	included above	
IT Labor			
Manager		1	1
Appl Team Lead		1	1
DBA/Sr. Developer		1	1
Developers/Programmer Analysts		4	4
Testers/QA Analysts		2	2
Operations Analysts		2	2

### DISCLAIMER:

1) This is an ESTIMATE and should not be quoted, or used with out permission of S. Smith.

### ASSUMPTIONS:

- Business/Requirements/Assumptions:**
- 1) Online capability (research and update - View, Ins, Del, Chg) is needed.
  - 2) System input and storage capabilities need to be flexible to accommodate varying CLEC data forms and input streams.
  - 3) System storage capabilities need to be able to accommodate data for at least 1 year (troubleshooting).
  - 4) The volume of live listings = 25 million records.
  - 9) Anticipated system change out per month = 1,250,000 transactions per month
  - 6) System needs capability to perform manual/automated maintenance for smaller ILECs.
  - 7) System should feed all downstream systems - w/load mode and update extracts (daily, weekly, monthly)
  - 8) System need Electronic Transfer and 3490 cartridge capability.

### Hardware/Assumptions:

- 1) Listing storage requirement = 4000 bytes (original file, raw in DB, indexes, output files, DB Backup, Logs) minimum
- 2) Need storage for up to 40 million records (maximum).
- 3) Need Raid 5 (at least 3 drives, same size, one drive is held in reserve for backup, testing and continuity).
- 4) Need mirrored system drives (pair of drives).
- 5) Need a primary/backup server with mirrored storage capability to protect against application failure.
- 6) Ideally, a backup DB Server and File Server, along with a backup of each server would be in place, 4 Servers minimum
- 7) Tape Backup and Off-site storage will be present for recovery.

# ESTIMATED COSTS TO CREATE A DALIS FUNCTION

8) Implementation includes adequate end-to-end testing, along with a Test System (another set of 2 servers) mirroring the production environment

Ideal System Requirements/Assumptions:			
Estimated Number of 36 Gig Drives Req'd			
(Normal Storage in Gig)			
2) DB storage needs	160		
3) File storage needs	96	2.67	4
4) Storage, plus Raid needs, 1 DB Server, 1 File Server	64	1.78	3
5) Total Req'd storage all four servers	252		
Based on Current			
	504	14	\$5,768.00 contract rates
System Level Need/Assumptions			
Estimated Number of 18 2 Gig Drives Req'd			
1) System Disk Needs per server (4 assumed) (18.2 gig drives assumed)	Based on		
2) Operating System (4 assumed)	145.6	8	\$1,616.00 rates
3) DB System (2 assumed - DB Servers)			
4) Backup Tape Drives Needed (2 assumed)			

## Initial Development/Assumptions

- 1a) Team of 9 people, full time, approximately 18 months to develop initial application
- 1b) Team includes 1 manager, 1 Appl Team lead, 1 DBA, 4 Developers, 2 Testers
- 2) At least 2-4 mechanized feeds

- 3) On-line build capability for manual input for non-mechanized ILECs
- 4) Build Extract feeds with capability to also accommodate Transfers (tape and electronic)
- 5) Build online capability to perform investigations of output data, input data and history
- 6) Provide system capability to process input/output data in one business day (8 hours) or less.
- 7) Provide system capability to perform rapid extracts for a full database load (25 million listings)

## Ongoing Development/Assumptions

- 1) Need 2 Operators to monitor database systems to ensure service level agreements are met.
- 2) Provide a change control system that has timely feeds to correct updates without full database reloads.
- 3) Need on-call developers to implement changes, and ensure timely issue resolution.
- 4) Ensure a method exists to regularly scrub the database
- 5) Ensure a problem management system is in place to provide timely resolutions. Develop new and better ways to track problems through the system.

Michelle R. Galbraith  
Key

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San Francisco, California 94105  
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E-Mail: michelle.galbraith@pactel.com

**PACIFIC**  **TELESIS**  
Group

April 18, 2002

**VIA ELECTRONIC MAIL AND U.S. MAIL**

Bill Harrelson  
WorldCom, Inc.  
201 Spear Street, 9<sup>th</sup> Floor  
San Francisco, CA 94105

Re: Responses of Pacific Bell Telephone Company to WorldCom's  
Third Set of Data Requests; Supplemental Response

Dear Mr. Harrelson:

Enclosed please find Pacific Bell's Supplemental Response to Data Request No. 1-6 (from your First Set of Data Requests), and its partial Responses to WorldCom's Third Set of Data Requests. The remainder of Pacific Bell's responses will follow. Pacific Bell has previously provided objections to these requests, and does not repeat them here.

Sincerely,



cc: John Clark  
Peter Casciato

**Data Request No. 6:**

Please provide a complete explanation of how the "\$ Per Hour" figure shown in rows 12, 14 and 18 of SBC Pacific's recurring DALIS study and rows 8 and 9 of the nonrecurring DALIS study was developed. Please also provide a complete copy of all original source documents, underlying workpapers and all other documents used to develop that number.

**Pacific Bell Supplemental Response to Data Request No. 6:**

The \$500 per hour CPU rate was established in the original AT&T Bill Collection study in the late 1980s. Once the \$500 rate was determined, it was filed with the California Public Utilities Commission, and was approved for inclusion in the Account Billing/Collections tariff segment (Schedule 175-T, Section 8). This "tariffed" rate is the same expense Pacific Bell itself incurs. Until a few years ago when the California Public Utilities Commission mandated that Pacific Bell make a 5% across-the-board rate adjustment, the CPU time reflected in the tariff was \$500. Today Schedule 175-T, Section 8 shows a CPU rate of \$472.90 (which is 5% less than \$500). However, since Pacific Bell's expense or cost was not reduced, we continue to use the \$500 per hour figure in computing our costs.

**Data Request No. 22:**

Please list each and every task that the computers that house DALIS data perform each month and the total time that each task typically requires.

**Pacific Bell Response to Data Request No. 22:**

Please see Pacific Bell's Response to Data Request No. 1, above. Additionally, it would be burdensome to respond to this request, as there are several thousand tasks that run on Pacific Bell's mainframe systems daily. Pacific Bell is therefore unable to itemize and quantify each task. Finally, as described in previous Data Request Responses, Pacific Bell excluded from its DALIS cost study all costs not specifically related to the DALIS product.



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the	)	
Commission's Own Motion Into Competition	)	R.95-04-043
for Local Exchange Service.	)	(Filed April 26, 1995)
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Order Instituting Investigation on the	)	
Commission's Own Motion Into Competition	)	I.95-04-044
for Local Exchange Service.	)	(Filed April 26, 1995)
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PACIFIC BELL TELEPHONE COMPANY'S (U 1001 C) FURTHER RESPONSES  
TO WORLD COM AND METRO ONE, INC.'S SIXTH SET OF DATA REQUESTS

Pacific Bell Telephone Company ("Pacific") hereby further responds to WorldCom and Metro One, Inc.'s Sixth Set of Data Requests in the DALIS Cost Study Phase of the above-captioned proceedings.

RESERVATION OF RIGHTS

Any information or materials provided in response to these data requests shall be without prejudice to Pacific's right to object or otherwise argue with respect to the admission in evidence, or otherwise argue with respect to the use as evidence or the relevance of such information, or its right to object to further discovery of documents, other information or materials relating to the same or similar subject matter upon any valid ground or grounds, including, without limitation, highly proprietary, privilege, work product, lack of relevance, lack of materiality, overbreadth, burden, oppressiveness or incompetence.

**Request No. 1(G)**

Regarding the costs summarized on page 2 for Tab 6, please provide a detailed explanation of each of the following:

- (G) Please provide a detailed explanation of why SBC Pacific believes that each of these costs is not included in SBC Pacific's existing OANAD UNE costs and prices.

**Response No. 1(G)**

The CPUC-mandated requirement for Pacific Bell to be the custodian/provider for database listings, took place in October of 2000 (in D.00-10-026, OP #2), which was nearly three years after SBC-Pacific's OANAD UNE TELRICs were adopted. Thus, any additional costs associated with being the custodian/provider, the acquisition, data storage and maintenance could not have been previously captured in SBC-Pacific's UNE TELRICs. While some of the costs were captured in the OANAD OA/DA UNE studies, OA/DA are no longer considered a UNEs (per the FCC's UNE Remand Order). Thus, since OA and DA are no longer UNEs, no database maintenance costs are currently captured in SBC Pacific's existing OANAD UNE costs and prices.

**TLM – 5**

**SBC Pacific  
Record Request Responses**



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Legal Department

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November 15, 2002

VIA ELECTRONIC MAIL AND U.S. MAIL

Bill Harrelson  
Worldcom, Inc.  
201 Spear Street, 9<sup>th</sup> Floor  
San Francisco, CA 94105

Re: Updates and Supplementary Data Requests

Dear Mr. Harrelson:

Pursuant to our meet and confer on October 28, 2002, attached is a summary of updates to previously answered data requests, and two additional supplementary requests and responses.

Sincerely,

*David Discher /mcc*  
David Discher

cc: John Clark  
Peter Casciato

## **DALIS DATA REQUESTS—UPDATES DUE TO 6/5/02 COST STUDY**

**Set 1:** No updates needed due to 6/5/02 study, with the exception of the following:

**DR 10:** A map of the 1998 DALIS study to items on the 3/25/02 study was provided; we will provide a new "map" on November 18, 2002.

**DR 20:** Reviewing to confirm whether updates are needed; if any update is needed, it will be provided on November 18, 2002.

**Set 2:** No updates needed due to 6/5/02 study

**Set 3:** No updates needed due to 6/5/02 study

**Set 4:** No updates needed due to 6/5/02 study

**Set 5:** No updates needed due to 6/5/02 study, with the exception of the following:

**DR 3:** The JES logs provided in response to Data Request 15, Set 3, provide support for .5 hours of computer processing time for creating an update file. SBC Pacific Bell maintains JES log reports for approximately one to three months, and no new basefile has been created in this time period. SME experience and review of JES log update information and knowledge that basefile creation takes additional processing time, led to the one hour used here.

**Set 6:** No updates needed, sent after 6/5/02 study; 10-28-02 "Meet and Confer" supplements are being provided separately

**10/28/02 Meet and Confer Data Request 1**

Explain the derivation of the calculations for 1A and 1B on page 8 of the 6/5/02 DALIS cost study

**10/28/02 Meet and Confer Data Request 1 (SBC PACIFIC BELL RESPONSE):**

Page 7:

Are the totals from Page 8 for 1A, 1B, 2 & 3.

Page 8:

Assumes that there is no existing DALIS function at SBC Pacific Bell and presents the costs associated with a wholesale-only, new business to provide this type of service.

**1A. "Data Acquisition Initial":** Represents the annualized "initial" start up costs to purchase the listings from retail providers of service so that a listings database could be established. The quantities are the amounts in our database and the costs are based on 2001 tariffed rates of other ILECs. The costs for acquiring the Roseville listings were not included due to disparate tariff rates.

The weightings shown on Page 8 come from the total dollars for Verizon & ILEC being divided by the Total # of listings for these same vendors.

Data Acquisitions-Initial

Total Dollars \$109,507.98 is divided by Total # of listings 2,831,173 (purchased from other ILECs, other than Roseville) = .039

**1B. "Data Acquisition Ongoing":** Represents the annualized "on-going" costs to purchase the updated listings from the retail providers once the database has been established. The quantities are the amounts of updates SBC Pacific Bell had in 2001 and costs are based on 2001 tariffed rates. The costs for acquiring the Roseville updated listings were not included due to its disparate tariff rates as compared to other ILECs.

The weightings shown on Page 8 come from the total dollars for Verizon & ILEC being divided by the Total # of listings for these same vendors.

Data Acquisitions-Ongoing

Total Dollars \$7,092 is divided by Total # of listings 162,600 (purchased from other ILECs, other than Roseville) = .044

**2/3. "Data Storage & Data Maintenance/Update":** Costs included here are the 'best estimate' of the SMEs, based on years' of experience and expertise, of what IT resources are involved to initialize, maintain and deliver DALIS listings. See attached workpapers.

**10/28/02 Meet and Confer Data Request 2:**

What is SBC Pacific Bell's DALIS pricing proposal?

**10/28/02 Meet and Confer Data Request 2 (SBC PACIFIC BELL RESPONSE):**

SBC Pacific Bell maintains that market-based pricing is appropriate for DALIS.

SBC Pacific Bell's proposed pricing plan for Directory Assistance Listings in California is equivalent to the market-based Directory Assistance Listing rates approved by the FCC in the X2A Agreements in SBC's 271 Applications for Missouri, Oklahoma, Kansas, Arkansas and Texas. X-2A Agreements are the state commission-approved interconnection agreements that result from CLEC collaborative in each specific state.

Proposed Pricing Plan as of November 15, 2002:

\$0.0585 per listing for the initial load

\$0.0585 per listing for each update listing (each addition, deletion, or change to the directory assistance database constitutes an updated listing.)

ESTIMATED COSTS TO CREATE A DALIS FUNCTION

DATA STORAGE ESTIMATES

Tab 7, Data Storage, Line 1

Unit Description	Class of Plant	2002	2003
Initial Hardware Costs	Midrange Computers	\$225,000.00	
Initial Software Costs	Software/RTU	included above	
	Total	\$225,000.00	\$0.00
IL Labor			
Manager		1	1
Appl Team Lead		1	1
DBA/Sr. Developer		1	1
Developers/Programmer Analysis		4	4
Testers/QA Analysis		2	2
Operations Analysis		2	2

DISCLAIMER:

1) This is an ESTIMATE and should not be quoted, or used with out permission of S. Smith.

ASSUMPTIONS:

Business Requirements/Assumptions:

- 1) Online capability (research and update - View, Ins, Del, Chg) is needed.
- 2) System input and storage capabilities need to be flexible to accommodate varying CLEC data forms and input streams.
- 3) System storage capabilities need to be able to accommodate data for at least 1 year (troubleshooting).
- 4) The volume of live listings = 25 million records.
- 9) Anticipated system change out per month = 1,250,000 transactions per month
- 6) System needs capability to perform manual/automated maintenance for smaller ILECs.
- 7) System should feed all downstream systems - w/load mode and update extracts (daily, weekly, monthly)
- 8) System need Electronic Transfer and 3490 cartridge capability.

Hardware Assumptions:

- 1) Listing storage requirement = 4000 bytes (original file, raw in DB, indexes, output files, DB Backup, Logs) minimum
- 2) Need storage for up to 40 million records (maximum).
- 3) Need Raid 5 (at least 3 drives, same size, one drive is held in reserve for backup, testing and continuity).
- 4) Need mirrored system drives (pair of drives).
- 5) Need a primary/backup server with mirrored storage capability to protect against application failure.
- 6) Ideally, a backup DB Server and File Server, along with a backup of each server would be in place, 4 Servers minimum
- 7) Tape Backup and Off-site storage will be present for recovery.



## ESTIMATED COSTS TO CREATE A DALIS FUNCTION

8) Implementation includes adequate end-to-end testing, along with a Test System (another set of 2 servers) mirroring the production environment

Ideal System Requirements/Assumptions:		Estimated Number of 36 Gig Drives Rqd			
(Normal Storage in Gig)					
2) DB storage needs	160				
3) File storage needs	96	2.67	4		
4) Storage, plus Raid needs, 1 DB Server, 1 File Server	64	1.78	3		
5) Total Req'd storage all four servers	252				
	504	14	\$5,768.00	Based on Current contract rates	
System Level Need/Assumptions		Estimated Number of 18.2 Gig Drives Rqd			
1) System Disk Needs per server (4 assumed) (18.2 gig drives assumed)					
					Based on Current contract rates
2) Operating System (4 assumed)	145.6	8	\$1,616.00		
3) DB System (2 assumed - DB Servers)					
4) Backup Tape Drives Needed (2 assumed)					

Initial Development Assumptions
1a) Team of 9 people, full time, approximately 18 months to develop initial application
1b) Team includes 1 manager, 1 Appl Team lead, 1 DBA, 4 Developers, 2 Testers
2) At least 2-4 mechanized feeds
3) On-line build capability for manual input for non-mechanized ILECs
4) Build Extract feeds with capability to also accommodate Transfers (tape and electronic)
5) Build online capability to perform investigations of output data, input data and history
6) Provide system capability to process input/output data in one business day (8 hours) or less.
7) Provide system capability to perform rapid extracts for a full database load (25 million listings)

Ongoing Development Assumptions
1) Need 2 Operators to monitor database systems to ensure service level agreements are met.
2) Provide a change control system that has timely feeds to correct updates without full database reloads.
3) Need on-call developers to implement changes, and ensure timely issue resolution.
4) Ensure a method exists to regularly scrub the database
5) Ensure a problem management system is in place to provide timely resolutions. Develop new and better ways to track problems through the system.

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Rulemaking on the Commission's Own Motion to  
Govern Open Access to Bottleneck Services and  
Establish A Framework for Network Architecture  
Development of Dominant Carrier Networks

Rulemaking 93-04-003  
(Filed April 7, 1993)

Investigation on the Commission's Own Motion into  
Open Access and Network Architecture Development of  
Dominant Carrier Networks

Investigation 93-04-002  
(Filed April 7, 1993)

**DECLARATION OF JASON M. KNAPP  
IN SUPPORT OF COMMENTS OF  
LSSI CORP., METRO ONE TELECOMMUNICATIONS, INC., AND WORLD COM,  
INC., CONCERNING SBC CALIFORNIA'S DIRECTORY ASSISTANCE LISTING  
INFORMATION SERVICE**

**I. QUALIFICATIONS OF JASON M. KNAPP**

1. My name is Jason Knapp. I am a Senior Software Applications Developer, Directory Services Solutions and Support for MCI WorldCom, Inc ("WorldCom"). My business address is 4200 C Street, SW, Building 2, Cedar Rapids, Iowa 52404.
2. I have an associate degree of applied science in computer programming from Kirkwood Community College, Cedar Rapids, Iowa.
3. Since 1996, as the chief development engineer, I have worked exclusively on the design and implementation of the WorldCom Directory Assistance Database Platform that resides on the Worldcom Mainframe. This includes development of all software and Worldcom proprietary processes used to manage the Directory Assistance data from receipt of the data from the ILECS through conversion of the data for use by WorldCom's Directory Assistance Operators and customers.

**II. PURPOSE OF DECLARATION**

4. I have been asked by WorldCom to address three issues that pertain to the amended DALIS cost study filed by SBC California in this proceeding on June 6, 2002. They are: (1) the number of contacts with SBC California employees during 2002 which were made by WorldCom regarding day-to-day DALIS issues; and (2) The number of listings WorldCom processed from SBC California in 2002.;

**II. DISCUSSION**

**A. WorldCom's contacts with SBC California Employees Regarding DALIS Issues**

5. During the year 2002, my office has perhaps dealt with only one or two of the employees identified in lines 2-5 of SBC California's DALIS Cost Study identified as Errata, 6/06/02, page 1. During last year, my office contacted Josh Smith, an account manager for SBC, a total of 4 times regarding SBC California issues. Each instance is listed below and were all related to problems with the SBC California data WorldCom received. I believe I spent a total of 2 hours in 2002 with SBC California on three of the issues (identified as issues 1, 2, and 4 below) regarding data integrity issues. I spent approximately 6 hours working on the SBC California initiated re-load where SBC California changed the format of the ILEC data it provides. In total, I spent about 8 hours in 2002 working on these issues with Mr. Smith.

**1. Sept 4th 2002 - Josh Smith**

SBC Pacific skipped a cycle number in their feed. I sent an email to Josh Smith stating we missed a cycle number in the feed. He responded saying that SBC Pacific did send the files, which was true, however, within the file, they had missed a cycle number. It was a timing issue, and changes need to happen on both sides, but because of how rare the issue is, SBC Pacific simply resent file. I may have briefly talked to someone else at SBC Pacific, but don't remember her name.

**2. August 22, 2002 - Josh Smith**

Listing issue where SBC Pacific is sending listings with locality of ELCADER IOWA, CA 94601. Appears to still be an issue in our database.

**3. April 16th, 2002 - Josh Smith**

SBC Pacific ILEC re-Load due to SBC data format change.

**4. December 28th, 2001 - Josh Smith**

Transmission issues with SBC Pacific ILEC - we were receiving empty files, and files out of order.

6. The fact that WorldCom has few issues with the SBC California data and only works with one person, Josh Smith, for all SBC-related issues makes me suspicious of the number of employees for Data Storage and Data Maintenance in SBC California's cost study.
7. Moreover, the amount of personnel employed by SBC California to administer the California listings seems suspect when it appears SBC California employs twice the number of employees to administer one tenth the amount of data WorldCom does. For instance, as Mr. Caputo states in his testimony, WorldCom employs approximately one dozen employees to manage and administer \*\*\* BEGIN WorldCom PROPRIETARY\*\*\* listings and roughly \*\*\* BEGIN WorldCom PROPRIETARY\*\*\* lion \*\*\* END WorldCom PROPRIETARY\*\*\* updates a year from \*\*\* BEGIN WorldCom PROPRIETARY\*\*\* different sources for its nationwide directory assistance service. According to SBC California's cost study,

SBC California employs a total of **\*\*\*BEGIN PROPRIETARY\*\*\*      \*\*\* END**

WorldCom **PROPRIETARY\*\*\*** people to oversee storage and maintenance of

**\*\*\*BEGIN WorldCom PROPRIETARY\*\*\*      llion \*\*\* END WorldCom**

**PROPRIETARY\*\*\*** listings and roughly **\*\*\*BEGIN WorldCom**

**PROPRIETARY\*\*\*      \*\*\* END WorldCom PROPRIETARY\*\*\*** daily

updates per year (as described below).

**B. The Number of SBC California Listings Processed by WorldCom**

6. WorldCom has roughly **\*\*\*BEGIN WorldCom PROPRIETARY\*\*\***  
**\*\*\*END WorldCom PROPRIETARY\*\*\*** directory assistance listing records from  
SBC California at any one time. This does not include the **\*\*\*BEGIN WorldCom**  
**PROPRIETARY\*\*\*      \*\*\*END WorldCom PROPRIETARY\*\*\*** records it  
receives from SBC California for other ILECs in California which I will not include in  
my analysis. As Mr. Caputo describes in his declaration, WorldCom receives daily  
updates from SBC California. In 2002 MCI WorldCom processed on average,  
**\*\*\*BEGIN WorldCom PROPRIETARY\*\*\*      \*\*\*END WorldCom**  
**PROPRIETARY\*\*\*** update listings per day just for SBC California listings. This  
works out to approximately **\*\*\*BEGIN WorldCom PROPRIETARY\*\*\***  
**\*\*\*END WorldCom PROPRIETARY\*\*\*** daily update listings per month. Monday  
through Friday, except Holidays. Over a year's time this works out to approximately  
**\*\*\*BEGIN WorldCom PROPRIETARY\*\*\*      \*\*\*END WorldCom**  
**PROPRIETARY\*\*\*** daily update listings total for the year.

7. When SBC California sends WorldCom the daily updates, WorldCom must integrate those updates into its own database by converting the file format and searching through each and every existing SBC California directory assistance listing in our database to incorporate the update. This process is completely automated and can be accomplished in matter minutes.

**D. Tape versus Electronic Delivery**

8. In reviewing the deposition testimony of Ms. Tanner, I found certain statements regarding the method of data delivery to be inconsistent with my experience and what I would consider to be standard industry practices. On pages 174-175 of the transcript, Ms. Tanner stated that SBC California assumed that most companies were moving toward tape delivery of the DA data rather than electronic delivery. I found this assumption to be absurd. WorldCom gets all of its directory assistance data feeds from listing providers nationwide in an electronic format. WorldCom has never received any daily updates in a tape format and it has been at least 2 years since WorldCom received an initial load via tape.<sup>1</sup>

**III. CONCLUSION**

9. This concludes my declaration.

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<sup>1</sup> In fact, SBC California recently changed its method of electronic transmission to WorldCom, although they failed to inform us that they made this change until after the change was made, causing considerable confusion.